UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,029	07/11/2003	Kenichi Komiya	047373-0133	2710

22428 7590 06/21/2005

FOLEY AND LARDNER
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER	
PHAM, HAI CHI	

ART UNIT	PAPER NUMBER
2861	

DATE MAILED: 06/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/617,029	KOMIYA ET AL.
	Examiner	Art Unit
	Hai C. Pham	2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *RCE & Amendment filed 04/19/05*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24 and 26* is/are rejected.

7)☒ Claim(s) *25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Request for a Continued Examination

1. The request filed on 04/19/05 for a Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 10/617,029 is acceptable and a RCE has been established. An action on the RCE follows.

Allowable Subject Matter

2. The indicated allowability of claims 5, 7 and 20 is withdrawn in view of the newly added subject matter, which is not supported by the Specification. Rejections of the claims 5, 7 and 20 under 35 U.S.C. 112, second paragraph, follows.

Claim Objections

3. Claim 8 is objected to because of the following informalities:

- Line 6, "a laser driver" should read --said laser driver--;
- Line 6, "a laser driver signal" should read --said laser driver signal--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 1-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 1:
- The amendment to claim 1 introduces the following new subject matter "each of said plurality of common scan lines corresponding to each of said plurality control signals", which is not supported by the specification. In fact, the plurality of control signals are modulated by a corresponding number of modulator to drive the laser unit to form a series of pixels on the same common scan line each time:

  "The beam scanning apparatus is then controlled to: (1) scan a common scan line using both the first control signal and the second control signal; (2) advance to the successive scan line; and (3) scan the successive scan line using the first control signal and the second control signal." (Specification, paragraph [0030])

- Claim 3:
- For the same reason as stated above, the following amended limitation "a first modulator configured to output a first modulated signal for odd successive pixel image data on **one** of said common scan lines and a second modulator configured to output a second modulated signal for even successive pixel image data on the **another** of said common scan lines" (emphasis added) is not supported by the specification.
- Claim 5:

- Again, the amendment to claim 5 introduces the following new subject matter "at least two control signals corresponding to said at least two common scan lines", which is not supported by the specification.
- Claim 20:
- The amended to claim 20 introduced the following limitation "said first control signal and said second control signal respectively being generated from said image data for first and second common scan lines in the main scanning direction", which is not supported by the specification for the same above-mentioned reason.

Claims 2-4 and 6-13 are dependent from claim 1 above, and are therefore indefinite.

Due to the uncertainty of the limitation as stated above, claims 1-13 and 20 are deemed to be so unclear as to preclude consideration in view of the prior art.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 14-19, 21-24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al. (U.S. 5,065,441).

Yamamoto et al. discloses a light beam scanning apparatus and method comprising:

Generating at least a fist control signal and a second control signal (pattern signals S_{Pa} and S_{Pb}) for driving the light emitting device (semiconductor laser 931), said first and second control signals being generated at the same pixel clock time (based on the same clock DCK) from image data for each of a plurality of common scan lines in the main scanning direction (the combined modulated control signals driving the laser for scanning each successive scan line),

driving the light emitting device with the first control signal to scan successive pixels along each of the plurality of common scan lines in the main scanning direction (the first control signal being modulated, e.g., S_{PWMa}, to drive the semiconductor laser to scan every other dots on a scan line at a time),

driving the light emitting device with the second control signal to scan successive pixels along each of the plurality of common scan lines in the main scanning direction (the second control signal being modulated, e.g., S_{PWMb}, to drive the semiconductor laser to scan the remaining every other dots on the same scan line in the main scanning direction),

pulse width modulating the first and second control signals (modulation circuit 110 comprising two pulse width modulating devices that include comparators 7A and 7B for generating the modulated control signals S_{PWMa} and S_{PWMb} as depicted in Fig. 1),

combining the first and second control signals (the modulated control signals S_{PWMa} and S_{PWMb} are combined by the NAND circuit 10),

wherein driving the light emitting device with the first control signal and driving the light emitting device with the second control signal comprises driving the light emitting device with a combined control signal (e.g., combined modulated control signal S_{PWM}),

combining the first and second control signals comprising Oring the first and second control signals (equivalent combining circuit 10),

wherein the first control signal corresponds to odd pixel image data (comparator 7A generating the first pulse width modulated signal S_{PWMa} of every other dots) (Fig. 2E) and the second control signal corresponds to even pixel image data (comparator 7B generating the second pulse width modulated signal S_{PWMb} of the remaining every other dots in the same common scan line) (Fig. 2F) (col. 4, line 65 to col. 5, line 3).

Aligning a center of even pixels with a center of odd pixels to maintain a pixel pitch within a predetermined range (the odd-numbered and even-numbered pixels forming the same common scan line and thus having their respective centers aligned on the same common scan line in the main scanning direction),

Synchronizing the first and second control signals with the reference clock (DCK),

Wherein the common scan line is a series of pixels along the main scanning direction of an object to be scanned (the successive dots forming the common scan line in the main scanning direction).

Allowable Subject Matter

8. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments filed 04//19/05 have been fully considered but they are not persuasive.

The Applicant incorrectly argues that the claimed "light beam scanning apparatus has a same number of common scan lines (i.e., data output lines as the number of modulators (i.e., PWMs)" since each of the modulators only modulates the respective control signal to form either the odd-numbered or even-numbered pixels for the same scan line each time. In other words, the plurality of modulators output modulated signals to form only a single scan line at a time as indicated in the following paragraphs of the Specification:

> *"The beam scanning apparatus is then controlled to: (1) scan a common scan line using both the first control signal and the second control signal; (2) advance to the successive scan line; and (3) scan the successive scan line using the first control signal and the second control signal."* (paragraph [0030])

"As described above, the first control signal and the second control signal control the light beam LD to scan along a common scan line." (emphasis added) (paragraph [0037])

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hai C. Pham

HAI PHAM
PRIMARY EXAMINER
June 16, 2005